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OPEN SPACE ELEMENT

....an element of the Imperial County General Plan

County planning Imperial co.
Land utiliz. " "

Adopted August 21, 1973

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OPEN SPACE ELEMENT

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IMPERIAL COUNTY GENERAL PLAN

INTRODUCTION

The incessant movement of urban uses into undeveloped areas has forced man to recognize that land and many of our natural resources are not inexhaustable. The rational organization of land uses into areas capable of supporting them is one objective of the planning process. Several elements of the General Plan contribute to the realization of a balanced environment in which we may live, work, and recreate. This element deals specifically with Open Space and its role in the development of Imperial County.

DEFINITION OF OPEN SPACE

Open space is considered here in its broadest terms as any land or body of water which is essentially unimproved and devoted to one or more of the following catagories of uses:

1. Preservation of Natural Resources
2. Managed Production of Resources
3. Outdoor Recreation
4. Protection of the Public Health and Safety

Any areas designated by the adopted Ultimate Land Use Plan of Imperial County or any adopted Current Land Use Plan, as General Agriculture, Desert Residential, Recreation, Preservation, or Special Public may be considered to be open space lands.

Functions of Open Space: Open space serves essentially four basic functions:

1. It satisfies the human need for aesthetic and recreational amenities,
2. It promotes and protects the broad range of natural resources, including soil, water, minerals, animals, plants, and cultural values,
3. It connects and integrates other land uses,
4. It effects economic decisions related to the pattern and direction of urban growth and development.

The Open Space Element is intended to provide for the integration of functional open spaces into the land uses identified in the Ultimate Land Use Plan and Current Land Use Plans. The timely identification and preservation of open space lands is intended to discourage their premature or improper conversion to intensive urban uses. Open space utilized for intensive urban uses is irretrievably lost.

LEGISLATIVE REQUIREMENTS

California Assembly Bill 966 required that:

> "On or before June 30, 1973, every city and county shall prepare, adopt, and submit to the Secretary of the Resources Agency, a local open space plan for the comprehensive and long-range preservation and conservation of open space land within its' jurisdiction."

This Element of the Imperial County General Plan meets this requirement, and shall become the Open Space Plan for Imperial County when adopted.

Supercession: This Element supercedes the Interim Open Space Element adopted on August 30, 1972, by the Imperial County Board of Supervisors.

LEGAL STATUS

Applicability: The Open Space Element applies to all unincorporated land within the County; each incorporated municipality is to adopt an individual Open Space Element for the land within its' boundaries. The County Open Space Element and those prepared by the Municipalities should be mutually supportive.

Limitations: This plan is not intended to impose restrictions on the use of any private property which would constitute a taking or damaging of property for public use which might require payment of just compensation or damages. In the event that the Board of Supervisors, County Planning Commission or other appropriate County official determines that the application of any provision of this plan to any private property would constitute such a taking or damaging, it is intended that such provision be modified or waived to the extent necessary to avoid such taking or damaging. It is specifically not the intent of this plan to preclude the placement, construction, or use of one single family residence on any parcel that existed as a parcel of record at the time of the adoption of this plan.

Relationship to Other Elements: The Open Space Element is part of the Imperial County General Plan. It is not a land use plan and does not replace the Ultimate Land Use Plan (which includes adopted Current Land Use Plans). It is supplementary in nature, and where areas of conflict develop, the most restrictive plan shall control.

Revision: As future studies by the County or other agencies provide additional information and data concerning open space land, the Open Space Element shall be amended as required.

GOALS AND OBJECTIVES

Goals: A goal is a general long-term end toward which action is directed. It is an ideal which has been determined by the citizens as desirable and deserving of community time and resources to obtain.

Objectives: An objective is a condition, which if realized, will contribute to the achievement of the long range goal. Shorter range, they may be identified and the degree to which they are realized provides the opportunity to evaluate the progress made toward the realization of the long range goals.

Adopted Goals and Objectives: The County of Imperial has previously adopted the following goals and objectives as part of the Interim Open Space Element. They are herein adopted and reaffirmed.

1. Agricultural open space will be conserved and checkerboard urban infringement will be prevented.
2. Recreational uses of open space will be restricted to areas adjacent to major thoroughfares or major bodies of water.
3. Minimum lot sizes for open spaces will be increased to inhibit economical development of speculative unimproved subdivisions.
4. Subject to availability of irrigation water, desert area open space will be secondary to agricultural open space.

5. It is recommended that the Department of Interior continue suspension of sales of desert land in the 5 to 20 acre parcel size.

6. Any recreational development permitted in wilderness or primitive areas must be developed in such a manner as to minimize the environmental impact.

7. The Imperial County Board of Supervisors and the Imperial County Planning Commission shall review the Open Space Plan on a continuing basis. Protective amendments shall be made to the plan when this review shows that an open space category is jeopardized.

Limitation on Goals and Objectives: The goals and objectives stated throughout the Open Space Element are general in nature and are not to be considered as regulations applicable to any specific parcel of land. It is intended that the goals and objectives be implemented only to the extent that such implementation is practicable and may be achieved by reasonable regulation or by the acquisition of property or rights therein if funds are available. Goals and Objectives applicable to the various catagories of open space uses are contained in the relevant sections of this Element.

RECOMMENDATIONS

The recommendations necessary to implement this Open Space Element are shown for each catagory of open space lands in the PROGRAM section.

RELATIONSHIP TO URBANIZATION

EXISTING URBANIZED AREAS

Imperial County is primarily a non-urban county, characterized by extensive unpopulated areas with several small urban centers. Although this plan does not regulate land within incorporated areas, its purpose is to aid in the fulfillment of the community goals and objectives. The cities, townsites, and communities must be considered in the development of an open space system.

PROJECTED URBANIZED AREAS

The agricultural character of the irrigated area and the limited capabilities of the arid lands has contributed to the relatively slow rate of population growth in the County. It is assumed, based upon the goals and objectives previously adopted by Imperial County, that future urban expansion will occur within and contiguous to existing urban areas. Townsite and community expansion will be minor and primarily within existing boundaries. The Ultimate Land Use Plan (including the Current Land Use Plans) delineates the future urban limits of existing cities and unincorporated urbanized areas for which major expansion is planned. The latter includes the Salton Sea Beach, Bombay Beach, Niland, Ocotillo, and Palo Verde areas. A new town is projected east of the Algadones Dunes adjacent to Interstate 8.

Open Space Requirements: Objective standards needed to determine the quantity of open space required are difficult to develop and at best provide only a rough guide to the long range needs of the community.

Large expanses of open areas currently exist in Imperial County, however much of these are inaccessible. The quality of the open space is perhaps of greater value than the quantity, and efforts should be directed toward the identification, protection, and acquisition of open areas which exhibit unique characteristics.

The open space areas of Imperial County serve both local and non-County residents. Certain features are of region-wide or national importance, thus the provision of facilities and the protection of those lands are now under State of Federal jurisdiction. The County should recognize and plan for the non-resident demand generated in the metropolitan San Diego, Los Angeles and Mexicali areas.

PLANNING AREA

The Planning area of this Open Space Element includes the entire region within County boundaries with the following qualification:

1. Municipalities should adopt their own open space elements. Any County Open Space Element proposals within the ultimate urban area should be consistent with these plans.
2. Some Federal and State land holdings are shown as open space, however the County cannot require their continued use for open space purposes.

MILITARY LANDS

It is assumed that the military holdings within the County will continue for the foreseeable future. The military leases substantial areas of land from the Bureau of Land Management and other agencies for training and

experimental operations. Certain areas have been designated as innaccesible to the general public under any conditions. Aerial parachute drops, gunnery, and bombing practice constitute a threat to the public health and safety in these areas. Additional areas are restricted for security reasons. A portion of the military lands may be open to the public over certain weekends on a permit basis, with the military retaining the right to deny or cancel ORV races or recreational uses when emergency or priority operations are necessary. The Department of the Navy and the Bureau of Land Management are presently negotiating an agreement by which a significant area adjacent to the Parachute Recovery Test Range would be accessible. In addition, the water segement of the Salton Sea Test Base is open to use except during testing operations. The County has no regulatory authority over these lands, and if controlled recreational use is permitted, it will be subject to the management procedures imposed by the Bureau of Land Management. The location of military holdings are indicated on the base map.

OPEN SPACE FOR THE PRESERVATION OF NATURAL RESOURCES

DEFINITION

Open space for the preservation of natural resources includes, but is not limited to, areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; river, streams, bays, and estuaries; and coastal beaches, lakeshores, banks of rivers and streams, and watershed lands.

GOALS AND OBJECTIVES

Imperial Valley possesses some of the most unique natural habitats, geological formations, and archeological sites in the Southwest. The value of these resources has in certain instances been recognized, in others it has not. The dependence of plants and animals on the preservation of unique habitat areas illustrates the fragile ecological balance that has developed in the Desert. Interuption of this ecological system endangers the existance of irreplaceable natural resources. The costs of innaction are becoming increasingly apparent. Loss of marshland habitat and it's food supply have reduced waterfowl numbers; archeological sites are damaged; and even the rare Giant Itaglio in the Yuha Desert area is being thoughtlessly destroyed. It is in recognition of the intrinsic value of these natural resources and the immediate need for their identification and preservation that the following goals and objectives are directed.

1. Provide the opportunity to enjoy a quality Nature - oriented experience to present and future generations.

2. Preserve unique or endangered plant and wildlife by the identification and preservation of their natural habitats.
3. Conserve areas of significant stands of plant life or endemic wildlife communities.
4. Encourage only those uses and activities that are compatible with the fragile desert, aquatic, and marshland environment.
5. Encourage the preservation and enhancement of the natural beauty of the desert and mountain landscape.
6. Promote scientific knowledge by encouraging the preservation of important ecological, archeological, and other scientific sites.
7. Encourage the acquisition, designation, and management of these important natural resource areas by Federal, State, and County agencies.

SELECTED CRITICAL HABITATS

Specific data on the location and extent of critical wildlife habitats in Imperial County is limited at the present time. Subsequent information from private groups and government agencies will enable more accurate and precise identification of critical habitat areas in the future.

Flora: The wide variety of plantlife in the arid desert region is seldom recognized. The fragile natural balance which enables certain plants to survive the extreme climatic conditions of the desert must be preserved. Desert plant communities, once disrupted, expire or recover very slowly.

Certain botanical types are unique and may require protective measures for preservation. The following plant types are considered rare or unique.

1. Elephant Trees (Bursera microphylla)
2. Crucifixion Thorns (Holocantha Emoryi)
3. Wild Buckwheat (Eriogonum deserticola)*
4. Locoweed (Astragalus Magdalenae)*
5. Ayenia compacia*
6. Lip fern (Cheilanthes fibrillosa)*
7. Lip fern (Cheilanthes parishii)*
8. Cryptantha ganderi*
9. Larkspur (Delphinium parishii)*
10. Desert Tea (Ephedra funfrea)*
11. Mammillaria alversonii*
12. Pilostyles thruberi*
13. Sage (Salvia greatae)*

* Source - California Native Plant Society

The location, extent, and condition of these plants should be studied. Loss of marshlands and riparian thickets, though not in itself containing any rare plant species, may have severe effects upon animal and migratory waterfowl populations. Destruction of plant habitat is occuring throughout the county as the by-product of human actions. These include off-road vehicle use and the unregulated harvest of natural vegetation by private individuals. State legislation and regulatory agencies protect these resources; the County of Imperial co-operates with and promotes these policies and legislative programs. Section 62502 of the Codified Ordinances of Imperial County specifically applies to the protection of certain trees, shrubs, and wildflowers. The provisions of that section are adopted by reference.

Fauna: The existence of desert wildlife is highly selective, permitting only the continuation of species that are adaptable to the desert. The restricted carrying capacity of the land, related to the availability of forage and water, limits the size of the large animal population. Human actions threaten the continued existance of certain species. A notable example of the incompatibility of man and certain wildlife species is the Desert bighorn sheep.

Now considered rare, the bighorn sheep habitat is steadily decreasing as man intrudes into wilderness areas. The following list of selected rare and endangered wildlife includes species not currently designated as rare or endangered according to U. S. Department of Interior standards but whose habitats are threatened. It is planned that by timely and effective preservation measures, these species will not become so classified.

Large Mammals - Desert bighorn sheep (Nelson and hybrid): Imperial National Wildlife Refuge and Anza Borrego Park

Burro deer - Imperial National Wildlife Refuge

Yuma mountain lion - Lower Colorado

Fish - Desert pupfish - San Felipe Creek Area

Birds - Yuma Clapper Rail - Imperial National Wildlife Refuge

The Salton Sea Waterfowl Management Area attracts numbers of rare and endangered migratory species. These include:

bald eagle

peregrin falcon

wood ibis

roseate spoonbill

American osprey

western burrowing owl

Yuma clapper rail

Several Federal and State agencies have been assigned the responsibility of protecting and managing natural wildlife resources. The County of Imperial should support these agencies, including the restriction of uses and activities permitted adjacent to designated wildlife resource areas.

PROTECTED AREAS - NATIONAL WILDLIFE REFUGES

Most of the protected areas are under the authority and management of State or Federal agencies. The existence of open lands included in these areas is assumed to continue and are indicated on the map.

Salton Sea National Wildlife Refuge: Located near the southern end of the Salton Sea, the refuge provides habitat for migratory and wintering waterfowl along the Pacific Flyway. Numerous rare and endangered species, as well as resident waterfowl, utilize the area, providing opportunity for passive non-consumptive recreational uses. The refuge consists of approximately 36,526 acres, however all but about 2,600 acres are submerged. As the level of the Sea rises from increased irrigation in the drainage basin, additional marshlands will be lost. Funds slated for the acquisition of additional lands were recently delayed indefinitely by the Federal government. The Federal government should be encouraged to extend its land holdings to permanently preserve and protect these natural resources.

Imperial National Wildlife Refuge: Situated along the Colorado River in the Lower Colorado Valley, the refuge covers approximately 25,765 acres. The portion of land in Imperial County is about 7,958 acres, all of which has been preserved as natural habitat. The refuge serves migratory waterfowl of the Pacific and Central Flyways, notably Canadian Geese. It provides protected habitat for many endangered animal types. These include the bighorn sheep, burro deer, Yuma mountain lion, Yuma clapper rail, and several species of migratory waterfowl. The narrow dense growth of marsh and brush vegetation along the river supports abundant small animal life.

Recreational pressure is already evident but has been confined primarily to the south end on the Arizona side. Most of the refuge is inaccesible except by boat as no roads and only few trails exist. Approximately 9,475 acres have been proposed for wilderness status to assure that natural primitive areas will continue to provide beauty, relaxation, and environmental education for Imperial County.

Cibola National Wildlife Refuge: Located along the Colorado River, only a small portion of this refuge is located in Imperial County. Primarily riverine, it protects much of the same wildlife types as the nearby Imperial National Wildlife Refuge.

PROTECTED AREAS - STATE WILDLIFE MANAGEMENT AREAS

The California Department of Fish and Game manages two Wildlife Areas in Imperial County. Both areas provide habitat for migratory waterfowl and reduce depredation of surrounding croplands.

Imperial Wildlife Management Areas: Located near the southern end of the Salton Sea, the Management Area is low lying marshland, some of which is under cultivation. The Area consists of three separate sites -

1. Finney - Ramer: 2044 acres preserved in natural habitat.
2. Hazard Fleet: 535 acres, 175 acres presently cultivated.
3. Wister: 5243 acres, 3340 in cultivation for the purpose of reducing crop depredation.

Julian Wash Wildlife Management Area: This area consists of 485 acres, adjacent to the Colorado River, preserved in natural habitat. It

provides sanctuary to many of the same plant and animal species as the nearby Imperial National Wildlife Refuge.

PROTECTED AREAS - RECREATION FACILITIES

State and National Parks, though devoted to the provision of recreational opportunities, often provide habitat and protection to unique and valuable plant and animal species. The facilities are mentioned here primarily for the natural values which they protect.

Picacho State Recreation Area: See: OPEN SPACE FOR OUTDOOR RECREATION - STATE RECREATION LANDS.

Anza - Borrego State Park: See: OPEN SPACE FOR OUTDOOR RECREATION - STATE RECREATION LANDS.

ECOLOGICAL, ARCHEOLOGICAL, OTHER SCIENTIFIC SITES

The desert region provides a unique educational classroom for expanding knowledge of cultural, scientific, historic, and natural values. Some of these areas are threatened by urban encroachment, others by the careless or wanton destruction by man. It is essential that these sites or areas be determined and means of preservation adopted in order to guarantee their continued presence. Assistance by the academic and scientific communities may provide valuable input while assuring that the most fragile and significant sites receive priority. These areas are noted on the Preservation of Natural Resources Map.

Algodones Sand Dunes (Imperial Sandhills): Located near the Chocolate Mountains in eastern Imperial County, these dunes are the most extensive in California. The gradually drifting sands extend between forty and fifty miles in length and provide excellent educational and research opportunities. The Dunes are examples of fossil lake-shoreline dunes and are habitat for a range of interesting plant and wildlife types. A Registered National Natural Landmark, a portion is presently being considered for designation as a "Research Natural Area". Recreational pressure on this resource has been intense, and care should be taken to assure the preservation of the scenic quality of the desert. The dunes are under Bureau of Land Management jurisdiction and their Desert Plan is an integrated approach to management policies which consider the total natural resource base. The County should actively support and participate in the development of a Desert Plan by Bureau of Land Management and other agencies.

Pumpkin Patch: Located near the San Diego County Line, this is an area of unique geological formations. The strange shapes of the rocks found in this area were formed through a long process of accretion. Private taking of these formations should be prohibited.

Salton Volcanic Domes: Located west of Calipatria, these unique geologic features are under consideration for designation as a National Natural Landmark. The natural features have been extensively altered by man, possibly to the extent that the national significance of the site no longer exists. If denied this designation, the County of Imperial should evaluate its local significance.

San Felipe Creek: This area is currently undergoing review to be designated as a National Natural Landmark. The area is unique as it possesses one of the few permanently flowing desert streams. It is in fact the last desert stream in the Colorado Desert that has not been destroyed by man. It is a prime area for archeological, paleontological, and ecological research.

Yuha Desert Area: One of Imperial Countys' most significant natural areas is a Yuha Desert. Its' value as an area rich in archeological, paleontological, and botanical information has been recognized. The Bureau of Land Management has classified 160,000 acres of the area as Priority I lands and the Yuha Desert Area Plan of Imperial County also notes the natural resource value of the area. The priceless and irreplaceable scientific sites are threatened by road building, mining, and the thoughtless actions of man. The following features within the Yuha Desert Area vicinity should be considered in any preservation program:

Sand Chimneys and Painted Gorge Formations: unique geologic features valuable for scientific knowledge and the beauty of the natural landscape.

Davies Valley: location of archeological and anthropological sites

Fossilized Oyster Beds and Ancient Shorelines: Paleontological site exhibiting deposits of fossilized material approximately 10 million years old. The ancient shorelines provide archeological and geologic study areas. Damage to these areas by fossil hunters, vehicles, and road building should be prevented.

Ancient Man Burial Sites: Valuable archeological sites exist throughout the area, some of which have doubtlessly not been located.

The 1971 excavation of Yuha Man, estimated to be 21,000 years old, is a significant archeological find. These sites should be protected from non-professional excavation or destruction.

Giant Itaglio: These large earth sculptures were constructed by pre-historic Indians. Itaglios are rare and one of the most fragile archeological features known. The Giant Itaglio in the Yuha Desert Area is presently being destroyed by vandalous human action. The rarity of prehistoric features demands more effective protective measures.

Crucifixion Thorns: A rare and unique botanical species, these plants are said to exist naturally in only a few places in the world. The County presently manages a Crucifixion Thorns Area, prohibiting access and the taking of these plants.

Truckhaven Archeological Site: Located west of Salton Sea Beach, it is considered to be an important living and quarry site of Pluvial Age Man. The discovery of a 5000 year-old Indian man illustrates the significance of the area. The State Department of Parks and Recreation is presently considering acquiring the site for acquisition for the State Park System. Imperial County is providing interim protection by lease agreement pending this decision.

WATER AREAS

Water bodies or flowing rivers or streams are usually important recreational and aesthetic resources, particularly in the arid Southwest. The New and Alamo Rivers are presently unsuitable for water-contact recreation and

serve to transport irrigation waste-water to the Salton Sea.

The Colorado River and Salton Sea are water resources which are of regional importance. The Colorado River and Salton Sea possess productive fisheries and other water oriented opportunities, both active and passive.

The salinity of the Salton Sea has risen significantly in recent years, and now threatens the continued existence of the fishery. If adequate measures are not taken to halt or reverse this process, it will disappear by the mid-1970's. The character of the Lower Colorado River has also been radically altered by the regulation of its flow for flood control, hydroelectric, and diversionary purposes.

Measures considered or proposed for the protection and enhancement of these important natural resources are discussed in the Conservation Element.

DEVELOPMENT STANDARDS

Quantifiable requirements for open space are of limited value, especially on a county-wide basis. The designation of certain plant and wildlife habitats should serve as a guide in any acquisition program, be it Federal, State of local. The location and extent of natural resource areas should be the basis of a sound program of natural resource preservation.

OPEN SPACE LANDS FOR THE MANAGED PRODUCTION OF RESOURCES

DEFINITION

Open space for the managed production of resources, including but not limited to, forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; areas required for recharge of ground water basins; bays, estuaries, marshes, rivers and streams which are important for the management of commercial fisheries; and areas containing major mineral deposits, including those in short supply.

GOALS AND OBJECTIVES

The availability of an adequate water supply, prime agricultural soil types, and favorable weather conditions have combined to create one of the nations' most productive agricultural regions. Imperial County, while not experiencing the rapid urban development characteristic of the coastal counties, has observed prime agricultural lands being lost to subdivisions and other urban uses. Recognition of the importance of preserving this unrenewable resource has prompted the development of certain goals and objectives. The utilization of mineral and quarry resources, while not of such critical concern, does warrant attention for the purpose of assuring their wise use.

1. Recognize the intrinsic value of agricultural land as open space which provides aesthetic relief from urbanization.
2. Retain prime agricultural land for exclusive agricultural use whenever possible or feasible.
3. Confine future urbanization within or adjacent to designated urban limits.
4. Encourage sound agricultural practices.

5. Encourage the exploration for and development of new sources of geothermal energy.
6. Encourage the economic and necessary extraction of mineral and quarry resources while protecting the natural environment and desert setting.

AGRICULTURAL CROP LANDS

Climate and topological features impose certain restraints upon the type of land suitable for cultivation in Imperial County. There are 740,000 acres of land suitable for intensive irrigated farming, however the available water supply is adequate to irrigate only 436,000 acres. The potential irrigable lands present a valuable future resource which should be protected. Obviously not all land is suitable or desirable for agricultural uses. To determine the location and extent of those lands that are prime agricultural types, soils have been mapped and classified according to their agricultural capability. Table I illustrates the class, suitability, and capability of each soil classification. The Soil Capability Map is a graphic representation of the location and extent of these soil classifications.
The availability of water for irrigation restricts the amount of farmland which may be cultivated. The Conservation Element illustrates areas of prime agricultural soils, including areas for which water is presently unavailable. The Open Space for the Managed Production of Resources Map incudes a significant portion of the available Class II and III soil types within the County. The San Felipe and Bard areas, an area in the vicinity of the Salton Sea Test Base, and the western area of the present irrigated area are Class II soils and must be carefully protected. The majority of the central county area is Class III soil and is also

TABLE 1.

LAND CAPABILITY CLASSES*

Group No.	Cultivation Suitability	Soil Classification
I	very good	Soils in Class I have few limitations that restrict their use.
II	good	Soils in Class II have some limitations that reduce the choice of plants or require moderate conservation practices.
III	moderately good	Soils in Class III have severe limitations that reduce the choice of plants or require special conservation practices or both.
IV	fairly good	Soils in Class IV have very severe limitations that restrict the choice of plants, require very careful management, or both.
V-VIII	Not Usually Suitable	Soils in Class V through VIII exhibit severe limitations which preclude their practical utilization for cultivation.

*Source: General Soil Map, Imperial County, Ca., prepared by U.S.D.A. Soil Conservation Service Co-operating with I.I.D., 1967.

considered of prime agriucltural value. The IID water distribution system serves compact areas of cropland. If these areas are lost to urbanization substantial reinvestment will be required to provide canals and ditches to new areas. These areas may be of less suitable soil types which require increased quantities of irrigation water to maintain current crop production levels.

The preservation of prime agricultural lands is beneficial to the public at large and adopted policies should encourage this end. The identification and preservation of prime agricultural land, based upon soil characteristics crop types, and water supply should provide the foundation for a rational and defensible preservation program. Refinement and clarification of the goals, policies, and objectives necessary to maintain the economic viability and importance of agriculture in Imperial County, will be found in the Proposed Agricultural Element.

LIVESTOCK PRODUCTION

Feedlots. Another economically important industry in Imperial County is the feeding of livestock, including cattle and sheep. Over 750,000 steers are fattended annually, valued at approximately 85 million dollars. This industry is a major consumer of other locally grown agricultural products such as hay and grain. Despite the economic desirability of feedlots, they may possess certain nuisance type characteristics such as offensive odors and dust. The incompatibility of feedlots and urban land uses is obvious. Close proximity of these uses is detrimental to both. Feedlot operations do not require highly productive agricultural land; they should therefore be encouraged to locate on marginal lands. The Proposed Agricultural Element will examine the requisites for efficient feedlot operation and provide locational require-

ments and development standards necessary to minimize nuisance type features.

Fish Farms. A relatively new enterprise in Imperial County is fish farming. This use requires large quantities of water and impermeable soils to minimize leakage. Some of the operations around the Salton Sea depend upon deep wells for water, while most utilize water from canals. The increase in the number of these operations indicates their economic viability. These uses are permissable and compatible to other agricultural uses as they will tend to locate in areas of soils with high clay content and low fertility.

GEOTHERMAL ENERGY

Imperial County is situated over an area believed to possess extensive geothermal resource potential. The areas of existing and potential geothermal development sites are indicated on the map of "Open Spaces for the Managed Production of Resources". The shortage of fossil fuels and their derivitives provide new incentives to the exploration for and development of new energy sources. Geothermal energy, energy produced from high temperature brine stored several thousand feet below the valley surface, appears to offer great promise. The high salinity of the brine solution may present a problem in its' utilization and disposal. The damage to agricultural lands which could result from ineffective brine disposal is of critical concern. One effective means of disposal is reinjection, which also reduces the possibility of subsidence.

The geothermal fields may also provide a valuable source of supplemental water. Both the problems of reduced quantity and quality of Colorado River water could be alleviated if desalinization of geothermal water proves

economically feasible.

Imperial County encourages the exploration and development of geothermal resources. The Geothermal Overlay Zone permits geothermal development and production of electrical energy in all areas to which it is applied. Interim procedures have been established and all geothermal exploration and development must conform to the "Terms, Conditions, Standards, and Application Procedures for Initial Geothermal Developments", adopted by the Imperial County Board of Supervisors and Planning Commission in May, 1971. The development of a Geothermal Element, essential to provide long range direction to the utilization of this important resource, will require Federal or State funds.

EXTRACTIVE LANDS

These lands are primarily open and are used to withdraw natural resources from the earth such as metals, sand and gravel, clay, etc. Extractive operations, though open, are often unsightly when viewed from a public right-of-way. The adoption of development and performance standards for the purpose of minimizing negative environmental impact is necessary.

The State of California and Imperial County utilize several quarry sites through-out the area, essentially in unpopulated locations. The continued use of these sites is recognized. Existing sand and gravel sites as well as general areas of mineral extraction are shown on the accompanying map. The sites indicated are not to be considered exclusive. Additional sites and area may be utilized for extractive purposes providing such use is consistent with the provisions of the Imperial County General Plan and regulatory devices adopted to implement it. Unless specifically stated, the identification

of mineral resources in a particular area does not necessarily require that extraction be permitted, however their presence should be considered when conflicting land uses are proposed.

OPEN SPACE FOR OUTDOOR RECREATION

DEFINITION

Open space for outdoor recreation, including but not limited to, areas of outstanding scenic, historic, and cultural value; areas particularly suited for park and recreation purposes, including access to lakeshores, beaches, rivers and streams; and areas which serve as links between major recreation and open-space reservations including utility easements, banks of rivers and streams, trails, and scenic highway corridors.

GOALS AND OBJECTIVES

Californians are a recreation minded people, the result of favorable climate varied natural recreation opportunities, increased incomes, and more leisure time. Imperial County's sand dunes, desert, Salton Sea, Colorado River, and sunny climate attract ever increasing numbers of users from within the County and the nearby metropolitan areas. The mobility of Californian's requires that recreational requirements be viewed from a regional perspective. Recreation as defined here includes both active and passive recreation. The County recreation program provides facilities of County-wide significance and utility; local recreational needs are provided for the most part by the incorporated cities. The following goals and objectives are consistent with those adopted by the Imperial County Recreation Element and are supplemental in nature.

1. Recognize the regional significance of the development and conservation of recreational opportunities in Imperial County.
2. Preserve and protect natural values in wilderness areas designated for recreational use. Passive recreation facilities

may be consistent with the preservation of natural habitat areas under certain conditions.

3. Provide a broad range of recreation facilities for all ages and economic groups, emphasizing family oriented opportunities.
4. Encourage the acquisition and development of additional County, State, and Federal recreation facilities.
5. Preserve and protect areas of historic and cultural significance, including unique archeological sites.

OUTDOOR RECREATION AREAS

Natural resources are the primary determinants of outdoor recreation. Included are climate, geologic character of the land, water features, flora, and fauna. These determinants are supplemented by significant historic and cultural factors. The extent of the natural resources available or the historic or cultural value placed upon a specified area will determine the location and degree of recreational development. Areas devoted to recreational use are shown on the "Open Space for Outdoor Recreation" map.

FEDERAL RECREATION LANDS.

A significant portion of Imperial County is held by the Federal government and controlled by the Bureau of Land Management. The Lower Colorado River Land Use Plan attempts to provide for future recreation demand while preserving and protecting wildlife, plant life, and unique geological formations along the river. The plan is a program for long range development formulated jointly by Federal, State, and local governmental agencies. It does not

establish definite committments to be implemented at the present time.

Algodones Dunes. See: OPEN SPACE FOR THE PROTECTION OF NATURAL RESOURCES - Ecological, Archeological, Other Scientific Sites.

Wildlife Refuges. See: OPEN SPACE FOR THE PROTECTION OF NATURAL RESOURCES - Protected Areas-National Wildlife Refuges.

Military Lands. Some military lands are suitable for recreational use, particularly ORV's, during non-operational hours. Subject to Navy and BLM agreement, these lands should be open to the public on designated weekends and during specific hours. The military lands that might be available are indicated on the Outdoor Recreation Map.

STATE RECREATION LANDS.

Picacho State Recreation Areas. Located along a seven mile stretch of the Colorado River, this area provides natural riverine habitat for many of the same plant and animal species as Imperial National Wildlife Refuge. A select group of rare or unique species include burro deer, bighorn sheep, and the Yuma clapper rail. Unique scenic values are created by volcanic formations and El Picacho itself, rising several hundred feet from the valley floor. The State of California is considering designating the area part of the State Park System.

Anza- Borrego State Park. A small portion of the park is located in Imperial County, including the Carrizo Impact Area. The Carrizo Impact Area is not open to public use as decontamination of all active ordinance cannot be guaranteed. The remaining Park area provides unique geologic formations as well as habitat for Nelson - Penninsula bighorn sheep. The California Department of Parks and Recreation is considering expansion of the park.

Salton Sea State Recreation Area. The Salton Sea State Recreation Area is located along fifteen miles of the northeastern shoreline of the Salton Sea. It provides water oriented recreation, picnicking, camping, and wildlife opportunities as well as access to the Salton Sea fishery. Many of the recreational facilities provided in the Salton Sea area are privately owned and developed. The County should establish development standards for recreation uses to assure preservation of natural values and rational development of the recreational resource.

Wildlife Management Areas. See: OPEN SPACE FOR THE PROTECTION OF NATURAL RESOURCES - Protected Areas-State Wildlife Management Areas.

COUNTY RECREATION LANDS

Imperial County provides numerous recreational facilities intended to serve as wide a range of interests as possible. Emphasis is placed upon family-oriented opportunities as well as those that encourage visitor use. A complete description of these facilities, with recommendations for expansion and development, is available in the adopted Recreation Element. County recreation facilities include:

Sunbeam Lake

Weist Lake

Red Hill Marina

Palo Verde Marina

Niland Marina

Walker Roadside Park

Hugh T. Osborne Lookout Park

Heber Beach Sand Dunes

The provision of adequate recreation facilities to meet increased demand is handicapped by the limited financial capability of Imperial County. Their use by a large non-resident population illustrates the regional importance of these desert recreation resources.

Yuha Desert Area. See: OPEN SPACE FOR THE PROTECTION OF NATURAL RESOURCES - Ecological, Archeological, Other Scientific Sites.

CULTURAL AND HISTORIC AREAS

Imperial County possess areas of significant historic and cultural value. Their preservation and protection are of vital concern to both present and future generations. The loss and destruction of irreplaceable archeological sites has been the result of urban encroachment and human actions. The identification of some areas of importance, notably archeological and other scientific sites, have been presented in the section entitled "Open space for the Preservation of Natural Resources." This section will deal primarily with sites or areas of historic significance, although the areas may obviously overlap.

San Felipe Creek. Important for its location along the path to the coast, the area was used as a watering hole by early travelers. De Anza visited the area in the 18th Century.

Yuha Desert Area. An area significant for early man. Primarily of archeological and anthropological interest, some of the area has been designated as historic preserve.

Plank Road. Located in the Algodones Sand Dunes, this historical road is being destroyed piecemeal by souvenir hunters. Imperial County has attempted to isolate a portion of the Road and preserve it for posterity.

Fort Yuma. Designated for priority acquisition and development by the State of California, Department of Parks and Recreation. Its historical use as a headquarters for control of the desert southwest is of primary importance.

UTILITY CORRIDORS AND IRRIGATION SYSTEMS

The Imperial Irrigation District operates the system of canals, indicated on the base map, that supplies domestic and irrigation water to the County. Power transmission right-of-way, ditches, and minor canals are not shown because the narrow right-of-way would not be discernable. In many instances these easements are only 50' in width.

Utility corridors present both opportunities and problems to the protection of open space. High voltage transmission lines are very evident in arid areas, and often seriously detract from the landscape. Measures must be taken to mitigate this negative impact. Certain irrigation corridors possess significant potential for recreational uses including fishing, picnicking, and bicycle or equestrian paths in areas near or adjacent to urban areas. If the problems of vandalism and liability could be overcome, the IID canal system could provide prime recreational sites at specified locations within the County. Joint development of these facilities would concentrate the uses and reduce the unauthorized fishing that presently takes place.

Although corridors for power transmission, communications, and irrigation

are necessary and will continue, attention must be directed toward reducing their negative visual impact and capitalizing upon their recreation potential. Should the production of geothermal electrical energy prove feasible and is thereafter extensively developed, a designated utility corridor will be negotiated to prevent the proliferation of high voltage transmission lines throughout the County.

OPEN SPACE FOR THE PROTECTION OF PUBLIC HEALTH AND SAFETY

DEFINITION

Open space for public health and safety, including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs and areas required for the protection and enhancement of air quality.

GOALS AND OBJECTIVES

California has experience with the loss of life and property associated with development in hazard prone areas. Legislation has required local action to provide for the increased safety of residents from natural disasters such as floods, landslides, or earthquakes. Strict structural requirements have been the result of public demand for greater safety from the danger of earthquakes. While legislation will not guarantee against loss of life or destruction, rational development policies will minimize the dangers. These goals and objectives are established for the purpose of protecting and promoting the public health and safety.

1. Recognize that certain lands are unsuitable for urban development, and that prohibition and restriction of intensive uses in these areas are in the best public interest.
2. Provide for the most beneficial use of lands based upon recognition of natural constraints as well as those imposed by uses existing and planned for the area.

3. Recognize that the negative effect of undesirable development is not limited to one site, but may significantly effect neighboring areas of uses as well.
4. Integrate hazard prone areas into the planned development of the County for non-intensive uses. These include but are not limited to, open space, recreation, and agricultural land uses.
5. Reduce public costs associated with the provision and maintenance of public utilities subject to damage or destruction in hazard-prone areas.

GEOLOGIC HAZARDS - FLOODPLAINS

Although located in an inland desert valley, Imperial County has experienced flooding. The Salton Sea was created by unusual winter floods in 1905. The New and Alamo Rivers pass through the irrigated area of Imperial County and serve primarily to dispose of irrigation water. Intensive development in the floodplains of these rivers would introduce obstacles to the flow and may create "bouncing" currents, increased floodheights, and increased velocity of flow. A more common problem in arid regions of the Southwest is the "flash flood" which may originate many miles away in the mountains or foothills. These floods often consist of a wall of water several feet high which may approach without warning in the narrow washes, and presents an extreme danger to anything in their path.

The legality and desirability of floodplain zoning has been established by the state Legislature in the Cobey-Alquist Floodplain Management Act. This act proposed a two district regulatory system, the "floodway" or high velocity flow area, and the "restrictive zone", the low velocity area of the outer floodplain.

Imperial County presently restricts development in some areas by the application of the Watercourse Overlay Zone (-W).

GEOLOGIC HAZARD - SEISMIC

Imperial County is situated in an area of active seismic activity which in some places may be identified by surface alterations. The Imperial, Superstition Hills, and Superstition Mountains Faults are part of the active San Jacinto Fault Zone.

The protection of public health and safety in areas of severe earthquake hazard requires an extensive analysis of the local geology. The State Geologist has been ordered by the Legislature to provide maps of "special studies zones" along active earthquake faults by December 31, 1973. The State Mining and Geology Board will concurrently establish criteria for evaluating development in these zones.

The identification of extreme hazard areas will permit the application of control devices to prevent certain types of development from occuring.

The Proposed Seismic Element will establish areas of seismic activity and appropriate development standards. In the interim, proposed development in the vicinity of known fault lines should be evaluated on a case-by-case basis, and hazardous areas maintained for "open" uses.

GEOLOGIC HAZARD - UNSTABLE SOILS

The identification of unstable soils is also an important consideration in establishing standards for the protection of public health and safety. For example, construction on soils subject to subsidence may have a significant

impact not only upon the primary site but upon surrounding uses as well. The critical drainage elevation of the irrigation system could be altered by subsidence. A major portion of the County, including almost the entire irrigated area, is composed of soils which possess severe limitations. Shrink-swell, the quality of soil that determines it's volume change with change in moisture content, is a problem prevelent in Imperial County, notably in the Salton Sea Beach and Calexico areas. Areas of soils with limited bearing capacity are also noted and are characterized by soft loamy soils and unconsolidated sandy and gravelly materials. Development plans for proposals located in these areas should recognize and provide for limited soil capabilities. Interpretive maps, detailing specific soil conditions and limitations, are presented in the Conservation Element.

AIRPORT FLIGHT ZONES

Existing air facilities are indicated on the accompanying map. The development of air travel and the introduction of jets has accentuated the imcompatibility of various uses to airport facilities. The expansion of several airports within the County, including Imperial County Airport will encourage the use of turbine engined corporate, and small commercial, aircraft. This may have a significant impact, particularly where flight zones are over populated areas.

IMPLEMENTATION

REQUIREMENT

Every local open space plan shall contain an action program consisting of specific programs which the legislative body intends to pursue in implementing its open space plan.

IMPLEMENTATION DEVICES

Realization of the goals and objectives set forth in the Open Space Element cannot be accomplished without the adoption of a program of implementation. Several methods of implementation are currently available and new techniques are under consideration by the legislature. The protection and preservation of open space cannot be successfully accomplished by any one technique. Table 2 illustrates the range of implementation techniques available for the preservation of various types of open space lands. The County should examine the potential of these devices and any others which the Legislature may provide and utilize those it feels are most useful.

REGULATION

The application of regulatory controls must be non-confiscatory, non-arbitrary, and reasonable. It is not the intent of any of these measures to deny any landowner the reasonable use of his land. The following are examples of regulatory techniques:

Subdivision ordinance. The local subdivision ordinance may require the dedication of park land or the payment of a fee-in-lieu thereof. This device

Table 2. IMPLEMENTATION DEVICES

Open Space Catagories

Techniques	PROTECTION OF NATURAL RESOURCES	MANAGED PRODUCTION OF RESOURCES		OUTDOOR RECREATION		PUBLIC HEALTH AND SAFETY	
		agriculture	extraction	recreation	cultural areas	geologic hazards	floodplains
AQUISITION OF FEE							
purchase	X			X	X		
gift	X			X	X		
tax foreclosure	X			X	X		
exchange	X			X	X		
LESS THAN FEE							
easement	X			X	X	X	
lease	X			X	X		
rights of entry	X						
deeds, covenants	X	X			X		
development rights	X	X					
REGULATION							
zoning ordinance		X	X		X	X	X
subdivision ordinance				X			
TAX							
preferential assessment		X					

has not been utilized to date by the County. The developer should bear the costs for the increased pressure new subdivisions place upon existing facilities. Revenues realized by this device may be utilized for parks elswhere in the County within a reasonable distance.

Large Lot Zoning. Agricultural lands require minimum parcel size for the preservation and protection of productive agricultural lands. A-1, A-2, A-3, and A-2-R utilize minimum area requirements.

Watercourse Overlay Zone. This zone would prohibit development in areas subject to flooding without issuance of a written permit from the County Engineer.

Open Space Zone. All unincorporated areas of the County not included in a precise zoning map are currently designated as "S" Open Space. This authorizes certain uses and has provided minimum lot size restrictions.

Business and Professions Code Section 11549.5 (AB 1301). This legislation requires the County to deny subdivisions which are not designed in accordance with the General Plan. The Open Space Element provides criteria against which development proposals may be measured so as to encourage the preservation of open space. This device should be utilized in the subdivision approval process.

ACQUISITION OF FEE

Recreation and Public Purposes Act. This act has recently been amended to include open space as a legitimate purpose. In the past, any land acquired had to be developed within a reasonable period of time. The County is

entitled to acquire 640 acres of Bureau of Land Management land per year at the cost of only $2.50 per acre. The County obtained 640 acres in the Desert Hot Spa Area by this method and could acquire 640 acres each year with the land to be retained as open space if it is included in this Open Space Element.

Gifts. Including gift with life tenancy.

Exchange. There are some lands in public ownership at the present time. The value and potential uses of these lands should be evaluated, and the possibility of exchanges for desirable open space or recreation lands explored. The County has successfully traded land with State and Federal governments for desirable excavation sites.

ACQUISITION OF LESS THAN FEE

Open Space Easements. Permits the granting of open space easements on privately owned lands for a term of not less than 20 years. Such lands must retain an open space character. Flooding easements are presently utilized in the Salton Sea area to limit damage caused by flooding.

Lease. The acquisition of long-term leases of property for specified purposes. The County presently leases the Truckhaven Archeological Site as an interim measure pending State or Federal acquisition.

Development Rights. The acquisition of development rights permit the retention of the open character certain land uses, notably agriculture. Incentive for owners to sell these rights would result from a considerably lower tax assessment in view of the absence of development potential.

PROGRAM

The following Recommendations are intended to provide a Program for the implementation of the Open Space Element.

OPEN SPACE FOR THE PRESERVATION OF NATURAL RESOURCES

1. Participate in conducting detailed investigations into the significance, location, extent, and condition of natural resources in the area.
2. Encourage State or Federal acquisition or management of areas or sites determined by the County and other agencies to possess important natural resource values, including small but significant landscape features and scientific sites.
3. Participate in the process of site and area evaluation and analysis after an area is determined to possess natural resource value.
4. Encourage acquisition of unique archeological or scientific sites by State and Federal agencies or non-profit organizations interested in preserving our cultural heritage.
5. Allow only compatible Land Uses and Consistent Zoning adjacent to protected areas.
6. Zone areas of natural resource value to preserve and protect their intrinsic values.
7. Preserve unique sites and areas by controlling direct public access.
8. Notify any agency responsible for protecting plant and wildlife before approving a project which would impact on rare or unique plant or wildlife habitat.

OPEN SPACE FOR THE MANAGED PRODUCTION OF RESOURCES

Agricultural Crop Lands.

1. Discourage and where feasible prevent urban development on prime agricultural lands (Class II and III soils).
2. Recognize the incompatibility of small parcels to agricultural uses by adopting and enforcing large minimum acreage requirements in agricultural zones.
3. Relate minimum acreage requirements in each zone to soil characteristics, climate, water availability, crop types, existing land-use ownership patterns, and proximity to urban development.
4. Encourage development of agriculturally related industries, such as packing and processing, on marginally productive lands.

Livestock Production.

1. Recognize the economic importance of livestock production as well as it's incompatibility to urban uses.
2. Establish a plan and the required zoning the prohibit feedlots in close proximity to residential or commercial uses. Conversely these provisions should provide for the protection of feedlot operations from encroachment by residential and other incompatible urban uses.
3. Establish adequate development and performance standards.

Geothermal Energy

1. Encourage development of geothermal energy and water desalinization consistent with environmental protection and the preservation of productive agricultural lands.

Extractive Lands.

1. Develop performance standards to assure minimum environmental impact from extractive operations.
2. Require reclamation of excavated sites to natural condition when operation is completed.

OPEN SPACE FOR OUTDOOR RECREATION.

1. Encourage State and Federal agencies to develop and operate recreational facilities which are determined by the County to possess more than local significance.
2. Provide County input into State and Federal recreation and wildlife planning programs.
3. Control development of recreation facilities in primitive or wilderness areas so that the natural values of the area are preserved.
4. Permit recreation uses primarily in areas adjacent to thoroughfares of bodies of water.
5. Off-road vehicle use is recognized as a popular recreational pursuit in the Imperial Valley. Areas which are not severely affected by ORV use should be set aside for this purpose.
6. Encourage the recreational use of lands located in hazardous areas such as flood plains.
7. Establish adequate development standards for private recreation facilities to assure the preservation of natural values.
8. Consider subdivision regulations requiring developers to dedicate land for park or recreational use or pay a fee-in-lieu thereof at the option of the County.

9. Encourage the identification and designation of historic buildings, landmarks, and sites within the County.
10. Encourage the acquisition of historic and cultural sites by public agencies or non-profit organizations interested in their preservation.
11. With the Imperial Irrigation District, explore the possibility of utilizing and improving certains portions of the canal system for picnic and fishing sites.
12. Encourage the use of inobtrusive materials, structures, and color in power line transmission corridors. Vegetative screening is encouraged wherever possible.

OPEN SPACE FOR THE PROTECTION OF PUBLIC HEALTH AND SAFETY

Floodplains.

1. Encourage responsible government agencies to conduct appropriate investigation of the potential size, extent, and location of future floods.
2. Floodway and floodplain boundaries should be established when requires studies have been completed.
3. Structural development normally shall be prohibited in the designated floodways. Only structures which comply with specific development standards should be permitted in the floodplain.
4. Encourage the preservation of floodplains for natural wildlife habitat, undeveloped recreational use, and agricultural production.

Seismic.

1. Proceed with the development of a Seismic Element.
2. Identify areas of known seismic activity and delineate general areas

in which development should be restricted.

3. Control structural development upon or in the vicinity of an active fault.

Unstable Soils.

1. Require detailed engineering or soils studies on a case-by-case basis for development proposals located in an area characterized by soils of limited capabilities.
2. Control development in areas of soil with properties which exhibit problems of erosion, limited bearing capacity, subsidence, shrink-swell, or slippage.

Airport Flight Zones

Adopt General Plan designations and appropriate zoning to control residential uses in the aircraft flight zones and in areas which may be subjected to severe noise levels.

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Expert Assistance

Bureau of Land Management
U. S. Department of Interior Geological Survey
California Native Plant Society
California Department of Parks and Recreation
Michael Barker - Imperial Valley College
Archeological Museum
Faculty of U.C. Riverside
Morland Childers

OPEN SPACE FOR THE PRESERVATION OF NATURAL RESOURCES

RIVERSIDE COUNTY

SAN DIEGO COUNTY

R9E R10E R11E R12E R13E R14E R15E

T12S T13S T14S T15S T16S T17S T18S

SALTON SEA

SANTA ROSA MTS.

CHOCOLATE MTS.

LITTLE MULE MTS.

BLACK HILLS

PALO VERDE MTS.

MIDWAY MTS.

SAN YSIDRO MTS.

COYOTE CREEK

CARRIZO MTS.

COYOTE MTS.

JACUMBA MTS.

SAN FELIPE WASH

THERMUM EXT. CANAL

WESTMORLAND

EAST HIGHLINE CANAL

ALAMO RIVER

BRAWLEY

MAIN CANAL

WISTER

IMPERIAL

EL CENTRO

HOLTVILLE

CENTRAL MAIN CANAL

NEW RIVER

ALAMO RIVER

PINTO WASH

CALEXICO

INTERNATIONAL BOUNDARY

MEXICO

SAND HILLS

ANAL

CARGO MUCHACHO MTS

IMPERIAL DAM

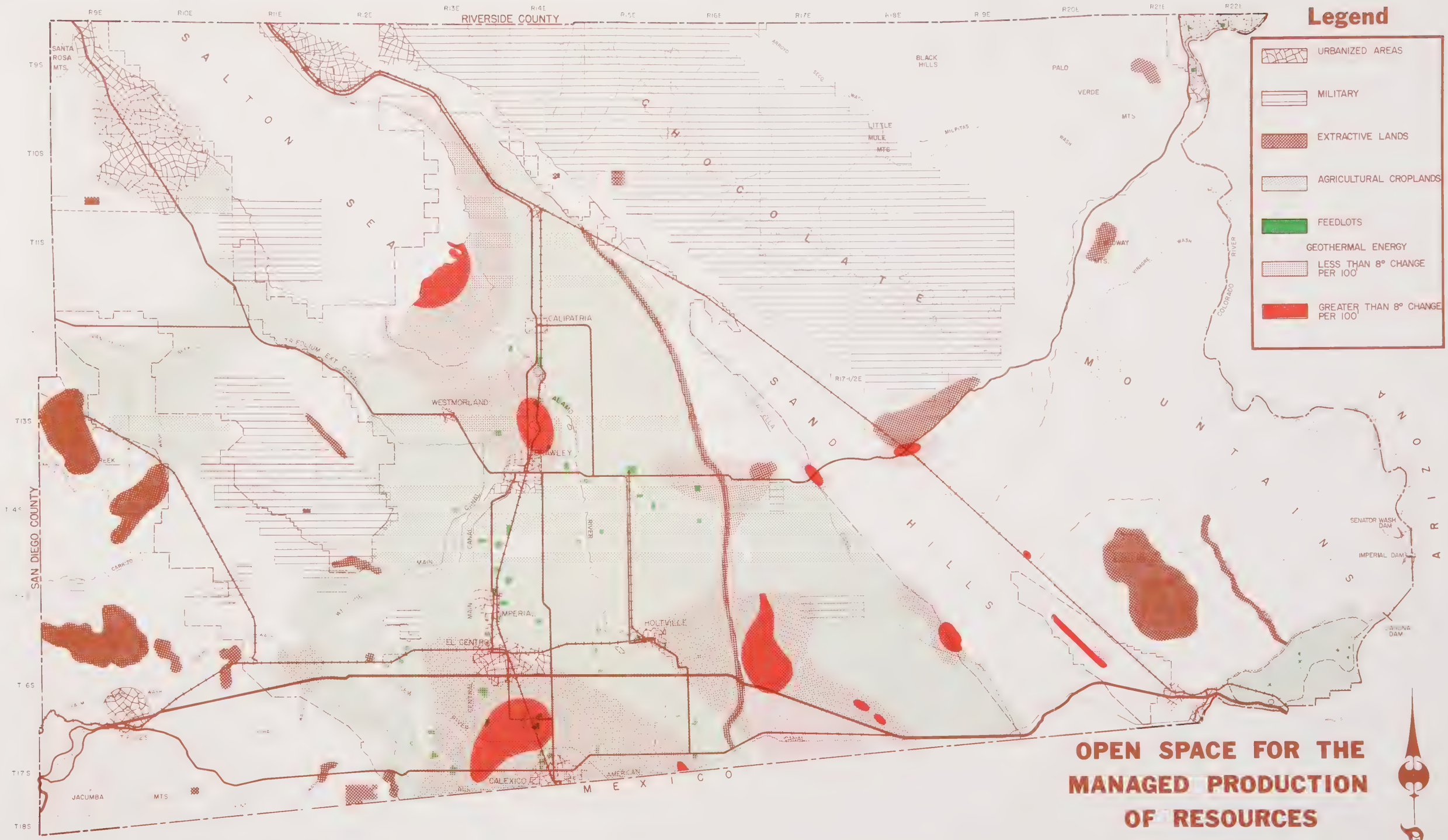
LAGUNA DAM

ARIZONA

Legend

- URBANIZED AREAS
- MILITARY
- CRITICAL MARSHLAND HABITAT
- CRITICAL LAND HABITAT
- BIGHORN SHEEP CONCENTRATION
- WILDLIFE REFUGE AND MANAGEMENT AREAS
- RECREATION FACILITIES
- ECOLOGICAL, ARCHEOLOGICAL AND OTHER SCIENTIFIC SITES

0 4 8 12 16
SCALE IN MILES



Legend

- URBANIZED AREAS
- MILITARY
- EXTRACTIVE LANDS
- AGRICULTURAL CROPLANDS
- FEEDLOTS

GEOTHERMAL ENERGY

- LESS THAN 8° CHANGE PER 100'
- GREATER THAN 8° CHANGE PER 100'

OPEN SPACE FOR THE MANAGED PRODUCTION OF RESOURCES

0 4 8 12 16
SCALE IN MILES

OPEN SPACE FOR OUTDOOR RECREATION

Legend

- URBANIZED AREAS
- MILITARY
- LIMITED USE MILITARY (BUFFER)
- MULTIPLE USE MILITARY
- FEDERAL OR STATE RECREATION LANDS
- WILDLIFE REFUGE OR MANAGEMENT AREAS
- COUNTY RECREATION LANDS
- CULTURAL AND HISTORIC AREAS

RIVERSIDE COUNTY

SAN DIEGO COUNTY

SALTON SEA

COLORADO DESERT

SANDHILLS

MOUNTAINS

MEXICO

ARIZONA

SANTA ROSA MTS.

BLACK HILLS

PALO VERDE MTS.

LITTLE MULE MTS

MILPITAS WASH

MIDWAY MTS.

VINAGRE WASH

COLORADO RIVER

CAL PATRA

WESTMORLAND

BRAWLEY

IMPERIAL

HOLTVILLE

EL CENTRO

CALEXICO

AMERICAN CANAL

CARGO MUCHACHO MTS.

LAGUNA DAM

IMPERIAL DAM

SENATOR WASH DAM

COYOTE MTS

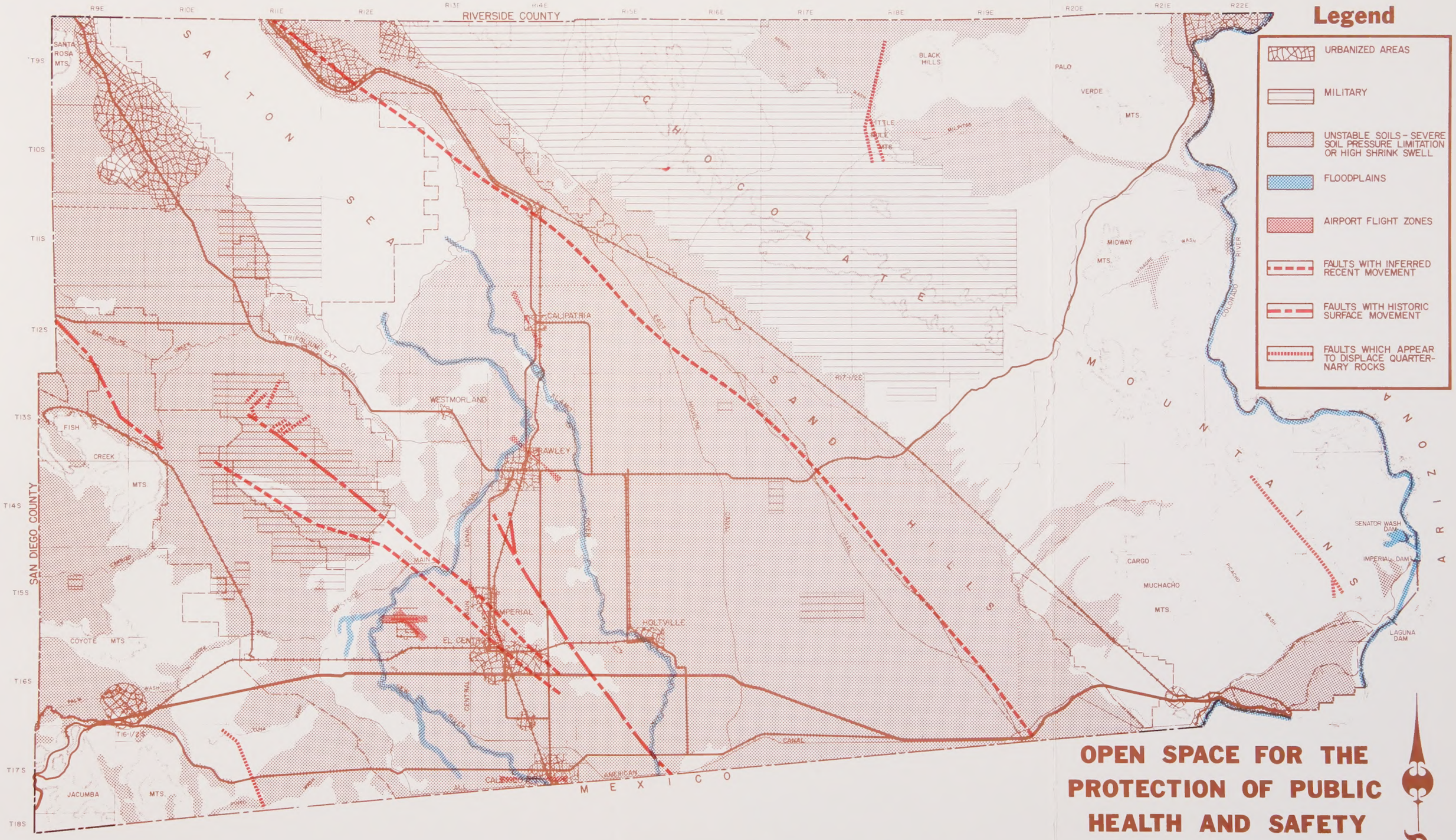
JACUMBA MTS

T9S T10S T11S T14S T15S T16S T17S T18S

R9E R10E R11E R12E R13E R14E R15E R16E R17E R18E R19E R20E

0 4 8 12 16

SCALE IN MILES



Legend

- URBANIZED AREAS
- MILITARY
- UNSTABLE SOILS - SEVERE SOIL PRESSURE LIMITATION OR HIGH SHRINK SWELL
- FLOODPLAINS
- AIRPORT FLIGHT ZONES
- FAULTS WITH INFERRED RECENT MOVEMENT
- FAULTS WITH HISTORIC SURFACE MOVEMENT
- FAULTS WHICH APPEAR TO DISPLACE QUARTERNARY ROCKS

OPEN SPACE FOR THE PROTECTION OF PUBLIC HEALTH AND SAFETY

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